Moving Forward to Address Challenges Identified in the Colorado River Basin Water Supply and Demand Study

Phase 1 Work Plan

U.S. Department of the Interior
Bureau of Reclamation

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1.0 Introduction

The Bureau of Reclamation's (Reclamation) Upper Colorado and Lower Colorado Regions and the seven Colorado River Basin States (Basin States), in collaboration with a wide range of Colorado River Basin (Basin) stakeholders, conducted a comprehensive study to define current and future imbalances in water supply and demand in the Basin and the adjacent areas of the Basin States that will receive Colorado River water for approximately the next 50 years, and to develop and analyze options and strategies to resolve those imbalances. The three-year Colorado River Basin Water Supply and Demand Study (Basin Study) which was completed in December 2012 confirmed that there are likely to be significant shortfalls between projected water supplies and demands in the Basin in coming decades.

Addressing such imbalances will require diligent planning and collaboration that applies a wide variety of ideas at local, state, regional, and Basin-wide levels. With this in mind, a process has been designed to pursue the categories of next steps identified in the Basin Study (Reclamation, 2012). Central to this process are partnerships and the recognition that pursuing these categories must be done collaboratively and continue to facilitate and build upon the broad, inclusive stakeholder process demonstrated in the Basin Study.

Those that rely on the Colorado River and its tributaries are committed to approaching these future challenges with the same steadfastness that they have approached and overcome past challenges. In May 2013, U.S. Department of the Interior Assistant Secretary for Water and Science Anne Castle and Bureau of Reclamation Commissioner Michael Connor publicly and formally initiated a process ("Next Steps") to begin to fulfill this commitment.

Phase 1 of this process, anticipated to be completed in the summer of 2014, was initiated through the formation of a multi-stakeholder Coordination Team to guide the efforts of three workgroups furthering Basin Study investigations regarding water conservation, reuse, and environmental and recreational flows. The three multi-stakeholder workgroups are named below:

1. Municipal and Industrial (M&I) Conservation and Water Reuse Workgroup
2. Agricultural Conservation, Productivity, and Water Transfers Workgroup
3. Environmental and Recreational Flows Workgroup

Additionally, State or Reclamation-led activities will simultaneously pursue other Next Step activities.

2.0 Purpose and Objectives

The overall purpose of the Next Steps workgroups is to advance the critical investigations developed in the Basin Study related to water conservation, reuse, and environmental and

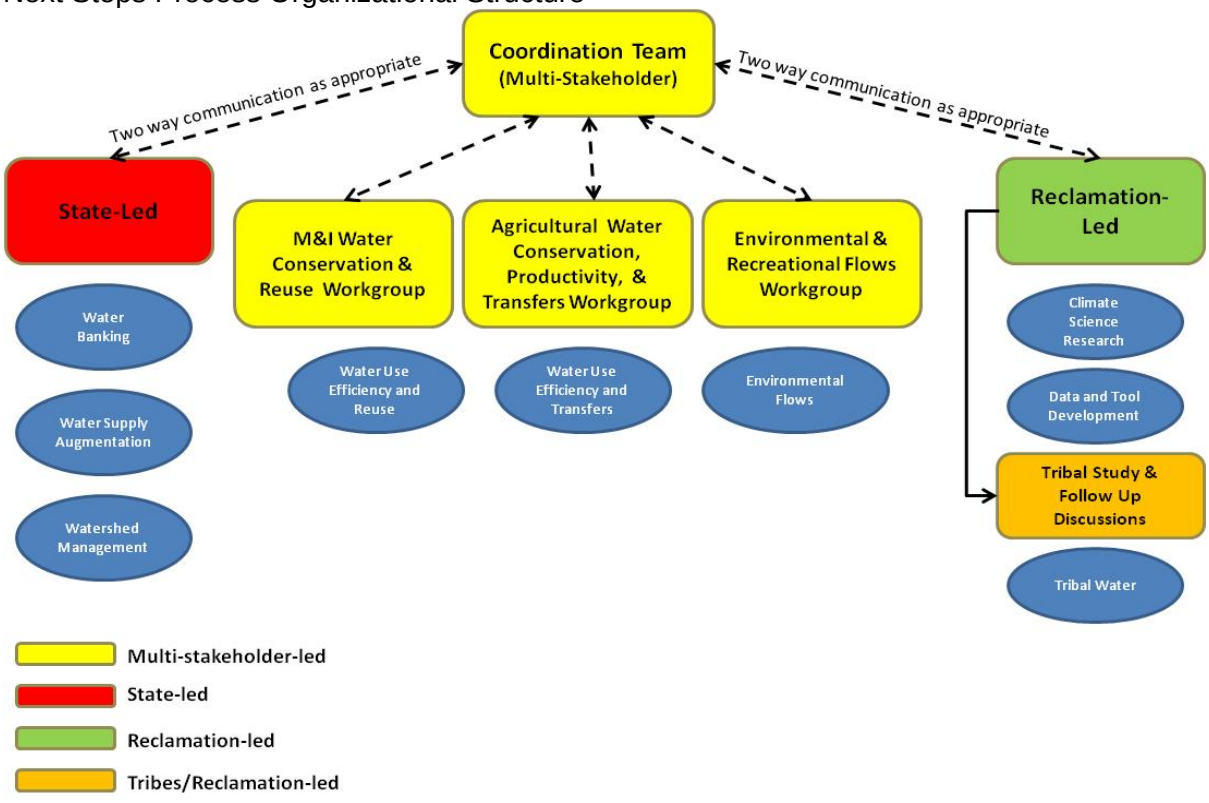
recreational flows. In doing so, the workgroups will identify actions to address projected supply and demand imbalances that have broad-based support and provide a wide range of benefits.

This document presents each workgroup's specific Phase 1 objectives along with the plan to achieve these objectives. A second phase of the "Next Steps" process will be conducted following Phase 1. The objectives of Phase 2 will be identified and described as one of the outcomes of the Phase 1 effort.

3.0 Organizational Structure

The organizational structure of the Next Steps process is presented graphically in Figure 1. The themes in the blue ovals correspond to the categories described in the Basin Study where next steps should be taken (Reclamation, 2012). These categories are being pursued through multi-stakeholder workgroups or through separate efforts led by the Basin States or Reclamation. For example, jointly with the Ten Tribes Partnership, Reclamation is pursuing a comprehensive study that will assess, for the tribes of the Ten Tribes Partnership, tribal water supplies, use, demand, and opportunities and challenges associated with the development of tribal water. Activities conducted through the workgroups are guided and coordinated by the multi-stakeholder Coordination Team. In September 2013, Reclamation entered into a contract with CH2M Hill to provide technical and administrative support for the Next Steps process.

Figure 1
Next Steps Process Organizational Structure



3.1 Coordination Team

The Coordination Team guides and reviews the efforts of the individual workgroups to promote efficient progress toward coordinated products within identified fiscal and time constraints. Both the Coordination Team and the workgroups consist of members with subject-matter expertise from various entities in an effort to bring important and different perspectives to the groups. Two representatives, one from Reclamation and one from the Basin States, serve as the co-chairs leading the Coordination Team. Coordination Team members are listed in Appendix 1.

3.2 Workgroups

Three workgroups have been formed: 1) M&I Conservation and Water Reuse, 2) Agricultural Conservation, Productivity, and Water Transfers, and 3) Environmental and Recreational Flows. Workgroup membership includes federal and state agencies, local municipalities, agricultural organizations and irrigation districts, federally recognized tribes, non-governmental organizations, consultants, and other interested stakeholders.
Each workgroup is led by selected co-chairs as specified below and who also participate on the Coordination Team. Entities participating on the workgroups are listed in Appendix 1.

- Representatives from the Arizona Municipal Water Users Association, The Metropolitan Water District of Southern California, and Denver Water serve as the co-chairs leading the M&I Water Conservation and Reuse Workgroup.
- Representatives from Reclamation, Imperial Irrigation District, and Colorado State University serve as the co-chairs leading the Agricultural Water Conservation, Productivity, and Transfers Workgroup.
- Representatives from Reclamation, The Nature Conservancy, and the Colorado Water Conservation Board serve as the co-chairs leading the Environmental and Recreational Flows Workgroup.

Under the guidance of the Coordination Team, the workgroups will be responsible for developing scopes of work, performing technical tasks, and keeping the Coordination Team apprised of other relevant activities and discussions.

4.0 Study Work Products and Schedule

Workgroup scopes, objectives, and key tasks were developed by the workgroups and approved by the Coordination Team. These objectives, along with the key tasks to accomplish those objectives, are presented for each workgroup in the following sections.

4.1 Coordination Team

The Coordination Team directs and reviews the efforts of the three workgroups such that the Phase 1 investigations are pursued in an effective manner, and within the specified financial and time constraints. The Coordination Team will integrate workgroup products, resolve issues raised by the workgroups, and perform final review of products for public distribution. The key tasks that the Coordination Team is responsible for conducting are listed in Table 1.

Table 1
Coordination Team Key Tasks

Task 1	Form and Initiate Workgroups
Task 2	Review Workgroup Draft Products
Task 3	Address Technical, Policy, and Integration Issues Associated with Workgroup Products
Task 4	Prepare Integrated Summary of Phase 1 Workgroup Reports
Task 5	Review and Approve Phase 2 Scope Proposed by Workgroups

4.2 M&I Conservation and Water Reuse Workgroup

M&I conservation and water reuse were common options in the strategies explored in the Basin Study to provide cost-effective solutions for resolving imbalances in the near-term. This workgroup will collect information from municipalities relying on Colorado River water and prepare a report that quantifies each municipality's savings from the initiation of conservation and reuse programs to date, documents programs that have been successful to date, quantifies the estimated amount of additional water savings each program will achieve by 2060, and estimates the anticipated impacts on Colorado River demand. From this baseline information, the workgroup will propose Phase 2 activities to the Coordination Team. Specifically, in Phase 1 the workgroup will perform the tasks listed in Table 2.

Table 2
M&I Conservation and Water Reuse Workgroup Key Tasks

Task 1	Quantify Water Conservation and Reuse Savings to Date
Task 2	Compile Information on Successful Water Conservation and Reuse Programs
Task 3	Quantify Projected Future Water Conservation and Reuse Program Savings
Task 4	Investigate the Impact of Historical and Future Water Savings on Colorado River Use and Demand
Task 5	Identify Phase 2 Activities
Task 6	Prepare Phase 1 Workgroup Report

4.3 Agricultural Conservation, Productivity, and Water Transfers Workgroup

Agricultural conservation and voluntary water transfers can have many benefits and in particular promote flexibility in adapting to uncertain future hydrologic conditions. This workgroup will collect information and prepare a report that quantifies agricultural conservation and transfers of Colorado River water (both within and outside the Basin) that have occurred to date, documents programs that have been successful to date, lists any existing future plans for these types of activities, and estimates what potential savings could come from these existing plans. From this baseline information, the workgroup will propose Phase 2 activities to the Coordination Team. Specifically, in Phase 1 the workgroup will perform the tasks listed in Table 3.

Table 3
Agricultural Conservation, Productivity, and Water Transfers Workgroup Key Tasks

Task 1	Quantify the Effects of Efficiency Projects, Conservation, and Transfers to Date
Task 2	Compile Information on Successful Projects and Programs
Task 3	Identify Existing Plans, Agreements, and Potential Opportunities for Future Conservation and Transfers
Task 4	Document Potential Impacts, Costs, and Funding/Incentive Programs Associated with Conservation and Transfer Programs
Task 5	Describe Third Party Impacts of Conservation and Transfers
Task 6	Identify Phase 2 Activities
Task 7	Prepare Phase 1 Workgroup Report

4.4 Environmental and Recreational Flows Workgroup

The Environmental and Recreational Flows Workgroup will build on the Basin Study's assessment of environmental and recreational flows. The workgroup will develop a methodology to select focus reaches and conduct an assessment of the current conditions in those focus reaches to support Phase 2 activities. Scientific uncertainties associated with flow-dependent ecological systems and river recreation throughout the Basin will be identified along with opportunities to address those uncertainties. Throughout the exploration of potential solutions that may be applied at a scale broader than a focus reach-level, the workgroup will recognize the effects on other resources, including hydropower, water deliveries and other consumptive uses. From this baseline information, the workgroup will propose Phase 2 activities to the Coordination Team that includes the exploration of potential solutions that protect or improve ecological and recreational resources while supporting other management goals to achieve integrated solutions that benefit multiple uses, consumptive and non-consumptive (including hydropower). Specifically, in Phase 1 the workgroup will perform the tasks listed in Table 4.

Table 4
Environmental and Recreational Flows Workgroup Key Tasks

Task 1	Identify Guiding Principles for the Workgroup
Task 2	Develop Selection Criteria to Identify Focus Reaches
Task 3	Apply Criteria to Select Focus Reaches
Task 4	Conduct Assessment of Current Conditions in Focus Reaches
Task 5	Identify Scientific Uncertainties and Opportunities to Address those Uncertainties
Task 6	Explore and Document Opportunities and Potential Solutions that might be Applied at a Larger Scale than Focus Reach
Task 7	Identify Phase 2 Activities
Task 8	Prepare Phase 1 Workgroup Report

5.0 Work Products and Schedule

Each of the workgroups will prepare a Phase 1 report summarizing the efforts and findings from the workgroup and will identify activities for Phase 2. The Coordination Team will prepare a Phase 1 summary report that integrates the workgroup products and synthesizes the recommendations for the development of a plan of study for Phase 2.

Table 5
Phase 1 Schedule

Activity	Date
Workgroup Formation and Phase 1 Scope Development	June – September 2013
Workgroups Perform Data Collection and Analysis Activities	September 2013 – April 2014
Workgroups Prepare Draft Phase 1 Reports	April 2014
Coordination Team Prepares Integrated Summary Report and Reviews Workgroups' Draft Phase 1 Reports	June 2014
Final Phase 1 Reports are Published	Summer 2014

6.0 References

Bureau of Reclamation (Reclamation). 2012. *Colorado River Basin Water Supply and Demand Study – Study Report.*

Appendix 1 – Coordination Team and Workgroup Membership

Phase 1 of the Next Steps activities includes the formation of a Coordination Team and three workgroups with members who represent federal, state, tribal, agricultural, municipal, hydropower, environmental and recreational interests. The Coordination Team directs and reviews the efforts of the three workgroups, which are listed below. Each workgroup consists of members with subject-matter expertise from various entities in an effort to bring important and varying perspectives to build on collaborative findings to pursue the next steps identified in the Study.

1.0 Coordination Team

A list of Coordination Team members and their affiliations is presented below.

- Tom Buschatzke, Arizona Department of Water Resources
- Carly Jerla, Bureau of Reclamation
- Chuck Cullom, Central Arizona Project
- Tanya Trujillo, Colorado River Board of California
- Jayne Harkins, Colorado River Commission of Nevada
- Dave Kanzer, Colorado River Water Conservation District
- Ted Kowalski, Colorado Water Conservation Board
- Erin Wilson, Colorado Water Users
- Jennifer Pitt, Environmental Defense Fund
- Bennet Raley, Front Range Water Council
- Kevin Kelley, Imperial Irrigation District
- Rob Billerbeck, National Park Service
- Kevin Flanigan, New Mexico Interstate Stream Commission
- Ed Smith, Palo Verde Irrigation District
- Bruce Hallin, Salt River Project
- Colby Pellegrino, Southern Nevada Water Authority
- Kay Brothers, Southern Nevada Water Authority consultant
- Peter Culp, Squire, Sanders & Dempsey LLP
- Darryl Vigil, Ten Tribes Partnership - Jicarilla Apache Nation
- Chuck Lawler, Ten Tribes Partnership - Southern Ute Indian Tribe
- Bill Hasencamp, The Metropolitan Water District of Southern California
- Taylor Hawes, The Nature Conservancy
- Don Ostler, Upper Colorado River Commission
- David Lytle, U.S. Geological Survey
- Robert King, Utah Division of Water Resources
- Sam Loftin, Western Area Power Administration
- Steve Wolff, Wyoming State Engineer’s Office

2.0 Municipal and Industrial (M&I) Conservation and Reuse Workgroup

The M&I Water Conservation and Reuse Workgroup is led by three Co-Chairs. The Co-Chairs and their affiliations are presented below.

- Kathy Ferris, Arizona Municipal Water Users Association
- Marc Waage, Denver Water
- Jack Safely, The Metropolitan Water District of Southern California

A list of all entities participating in the workgroup is presented below.

- Albuquerque-Bernalillo County Water Utility Authority
- American Rivers
- Arizona Municipal Water Users Association
- Arizona Public Service
- Bureau of Reclamation
- City of Cheyenne Board of Public Utilities
- City of Flagstaff
- City of Santa Fe
- Colorado River Board of California
- Colorado Springs Utilities
- Colorado State University
- Colorado Water Conservation Board
- Denver Water
- Eastern Municipal Water District
- Environmental Defense Fund
- Green River - Rock Springs - Sweetwater County Joint Powers Water Board
- Jordan Valley Water Conservancy District
- Los Angeles Department of Water & Power
- New Mexico Office of the State Engineer
- Public Service Company of New Mexico
- San Diego County Water Authority
- Southern Nevada Water Authority
- The Metropolitan Water District of Southern California

3.0 Agricultural Conservation, Productivity, and Transfers Workgroup

The Agricultural Water Conservation, Productivity, and Transfers Workgroup is led by three Co-Chairs. The Co-Chairs and their affiliations are presented below.

- Ken Nowak, Bureau of Reclamation
- Reagan Waskom, Colorado State University
- Tina Shields, Imperial Irrigation District

A list of all entities participating in the workgroup is presented below.

- Bureau of Reclamation
- California Department of Water Resources
- Central Arizona Project
- Coachella Valley Water District
- Colorado River Board of California
- Colorado River Commission of Nevada
- Colorado River Indian Tribes
- Colorado River Water Conservation District
- Colorado State University
- Colorado Water Users
- Environmental Defense Fund
- Family Farm Alliance
- Imperial Irrigation District
- Los Angeles Department of Water & Power
- Maricopa-Stanfield Irrigation & Drainage District
- National Young Farmers Coalition
- Natural Resources Conservation Service
- New Mexico Office of the State Engineer
- Northern Colorado Water Conservancy District
- Palo Verde Irrigation District
- San Diego County Water Authority
- San Juan Water Commission
- Southeastern Colorado Water Conservancy District
- Southern Nevada Water Authority
- The Metropolitan Water District of Southern California
- The Nature Conservancy
- Trout Unlimited
- Upper Colorado River Commission
- Utah Division of Water Resources
- Wellton-Mohawk Irrigation & Drainage District
- Western Governors' Association
- Wyoming State Engineer's Office

4.0 Environmental and Recreational Flows Workgroup

The Environmental and Recreational Flows Workgroup is led by three Co-Chairs. The Co-Chairs and their affiliations are presented below.

- Alan Butler, Bureau of Reclamation
- Ted Kowalski, Colorado Water Conservation Board
- Taylor Hawes, The Nature Conservancy

A list of all entities participating in the workgroup is presented below.

- American Rivers
- American Whitewater
- Arizona Department of Water Resources
- Bureau of Reclamation
- Central Arizona Project
- Colorado River Board of California
- Colorado River Energy Distributors Association
- Colorado River Water Conservation District
- Colorado Springs Utilities
- Colorado Water Conservation Board
- Environmental Defense Fund
- Front Range Water Council
- National Park Service
- National Parks Conservation Association
- New Mexico Interstate Stream Commission
- Southern Nevada Water Authority
- Squire, Sanders & Dempsey LLP
- The Metropolitan Water District of Southern California
- The Nature Conservancy
- Theodore Roosevelt Conservation Partnership
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- Utah Associated Municipal Power Systems
- Utah Department of Natural Resources
- Western Area Power Administration
- Zebre Law Offices